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## REMARKS

By this amendment, claims 1-10, 12-13, 15, 18, 20, 22-23, 30-34, 36 and 51-64 are pending in the application. Of these, claims 1-10, 12-13, 15, 18, 20, 22-23, 30-34, 36, 51, 55-57, 61 and 63 are being amended. Claims 11, 14, 19, 21 and 35 are being canceled. The amendments are fully supported by the originally filed specification and original claims and add no new matter. Entry of the amendments and new claims and reconsideration of the present case is respectfully requested.

### Rejection Under 35 U.S.C 102 of Claims 1-15, 18-23, 30-36 and 51-64

#### Van Os et al.

The Examiner rejected claims 1-4, 11-12, 18-21, 23, 30, 31, 34, 51, 55-57 and 64 under 35 U.S.C. 102(c) as being anticipated by U.S. Patent No. 5,792,272 to van Os et al. This rejection is traversed.

Claim 1 is not anticipated by van Os et al. because van Os et al. does not teach "a wall having a radiation permeable wall portion, the radiation permeable wall portion comprising a plurality of recesses sized to reduce the deposition of process residues therein," as recited in the claim. Instead, van Os et al. discloses that "A sight glass 39 is suitably disposed in the center of the gas injection manifold for providing an optical interface to view the plasma discharge." (Column 6, lines 27-29.) Van Os et al. does not teach that the sight glass has a plurality of recesses, and also does not teach recesses sized to reduce the deposition of process residues. For example, van Os et al. does not teach that the sight glass has recesses having an aspect ratio or opening size that reduces deposition. Instead, van Os et al. discloses that "the sight glass is circular and is made of sapphire, which resists attack from the plasma and chemicals" (column 6, lines 29-31.) Thus, van Os et al. discloses that a composition of the sight glass is selected to resist attack from a plasma, but does not teach or suggest providing a recess that is sized to reduce deposition. Thus claim 1 and the claims d p nding

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therefrom are not anticipated by van Os et al. Claim 30 similarly recites "a plurality of recesses" having an "aspect ratio sized to reduce the deposition of process residues", and thus this claim and the claims depending therefrom are also not anticipated by van Os et al.

Claim 18 is not anticipated by van Os et al. because van Os et al. does not teach "a ceiling having an integral radiation permeable wall portion, the radiation permeable wall portion having a recess sized to reduce the deposition of process residues therein," as recited in the claim. Instead, as discussed above, van Os et al. discloses a sight glass in a gas injection manifold, but does not teach that the sight glass comprises a recess sized to reduce deposition. Van Os et al. also does not teach that the sight glass is integral with the ceiling to form a single unit with the ceiling, as shown for example in Figure 1A of the specification. Accordingly, claim 18 and the claims depending therefrom are not anticipated by van Os et al. Claim 51 similarly recites "sidewall having an integral radiation permeable wall portion, the radiation permeable portion wall comprising at least one recess sized to reduce the deposition of process residues," and thus this claim and the claims depending therefrom are not anticipated by van Os et al.

**Desilets et al.**

The Examiner rejected claims 1-4, 11, 18-21, 30, 31, 34, 51, 55-57 and 64 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,384,938 to Desilets et al. This rejection is respectfully traversed.

Claim 1 is not anticipated by Desilets et al. because Desilets et al. does not teach "wall having a radiation permeable wall portion, the radiation permeable wall portion comprising a plurality of recesses sized to reduce the deposition of process residues therein," as recited in the claim. Instead, Desilets et al. discloses a single view port that extends out from a chamber (Figure 2.) Desilets et al. does not teach that the view port comprises a plurality of recesses, and also does not teach recesses sized to

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reduce deposition therein. Accordingly, claim 1 and the claims depending therefrom are not anticipated by Desilets et al. Claim 30 similarly recites a plurality of recesses sized to reduce deposition, and thus this claim and the claims depending therefrom are also not anticipated by Desilets et al.

Claim 18 is not anticipated by Desilets et al. because Desilets et al. does not teach "a ceiling having an integral radiation permeable wall portion, the radiation permeable wall portion having a recess sized to reduce the deposition of process residues therein," as recited in the claim. Instead, as discussed above, Desilets et al. discloses a view port, but does not teach that the view port is integral with a ceiling, and also does not teach that the view port has a recesses sized to reduce deposition. Claim 51 similarly recites a sidewall about a support having an integral radiation permeable wall portion and recess sized to reduce deposition. Accordingly, claims 30 and 51 and the claims depending therefrom are not anticipated by Desilets et al.

**Saito et al.**

The Examiner rejected claims 1-4, 11-13, 18-21, 23, 30, 31, 34, 51, 55-57 and 64 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,565,114 to Saito et al. This rejection is respectfully traversed.

Claim 1 is not anticipated by Saito et al. because Saito et al. does not teach "a wall having a radiation permeable wall portion, the radiation permeable portion comprising a plurality of recesses sized to reduce the deposition of process residues therein," as recited in the claim. Saito et al. discloses that "a transparent member 246 is fitted in the recess portion 243" (column 24, lines 24-25), where the recess portion is at the sides of the transparent member 246 and is not exposed to the inside of the chamber, as is illustrated in Figure 27. Saito et al. does not teach that the transparent portion comprises a plurality of recesses, or that the recesses are sized to reduce deposition. With regards to the recess portion, Saito et al. discloses that "The transparent member 246 is slightly smaller than the recess portion 243. Therefore,

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even if the transparent member 246 expands upon heating, this expansion is tolerable" (column 24, lines 32-35.) Thus, Saito discloses fitting a transparent member into a recess that is wide enough to accommodate an expansion of the transparent member, but does not teach a recess that is sized to reduce deposition of process residues. Accordingly, claim 1 and the claims depending therefrom are not anticipated by Saito et al.

Similarly, Saito et al. does not anticipate claim 30 because, as discussed above, Saito et al. does not teach the "radiation permeable wall portion having a plurality of recesses originating at an internal surface of the radiation permeable wall portion, the recesses having an aspect ratio sized to reduce the deposition of process residues therein," as recited in the claim.

Claim 18 is also not anticipated by Saito et al. because Saito et al. does not teach a "ceiling having an integral radiation permeable wall portion, the radiation permeable wall portion having a recess sized to reduce the deposition of process residues therein," as recited in the claim. Saito et al. does not teach a radiation permeable wall portion that is integral with a ceiling, and instead discloses a transparent member that is separated from the rest of the wall by a recess portion, as illustrated in Figure 27. Saito et al. also does not teach a recess sized to reduce deposition, as discussed above. Accordingly, claim 18 and the claims depending therefrom are not anticipated by Saito et al. Claim 51 similarly recites a sidewall having an integral radiation permeable wall portion, and a recess sized to reduce deposition, and thus is also not anticipated by Saito et al.

**Imatake et al.**

The Examiner rejected claims 1-7, 11-14, 18-23, 30-35, 51-58, 61 and 64 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,759,424 to Imatake et al. This rejection is respectfully traversed.

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Claim 1 is not anticipated by Imitake et al. because Imitake et al. does not teach "a wall having a radiation permeable wall portion, the radiation permeable wall portion comprising a plurality of recesses sized to reduce the deposition of process residues therein," as recited in the claim. Instead, Imitake et al. discloses that "an article having a plurality of elongated holes having a sufficiently small diameter is placed inside the window to prevent contact of the plasma to the window" (column 4, lines 27-29.) The plasma shielding article and window are arranged such that "a sampling window 21 without a glass plate being mounted is provided in the wall surface 20 of the processing chamber, and a plurality of shields and a glass plate 15 are mounted by a hermetic sealing O-ring 16" (column 14, lines 8-12), as is also shown in Figure 4. Thus, Imitake et al. discloses a plurality of elongated holes in front of a glass plate in a sampling window, but does not disclose a radiation permeable wall portion comprising a plurality of recesses, as the inner walls defining the plurality of elongated holes, shown in Figure 4, are set off from, and are not connected to, the glass plate.

Furthermore, Imitake et al. teaches against the claimed radiation transmitting portion having the plurality of recesses by discussing the importance of providing a space between the inner walls defining the elongated holes and the glass plate. Imitake et al. discloses that "by introducing inert gas such as Ar from a gas nozzle 18 and flowing it into the processing chamber from the glass plate through the hole, the reaction product is prevented from arriving to the glass plate 15" (column 14, lines 32-35). Thus, as is also shown in Figure 4, Imitake et al. discloses flowing a gas in a space between the glass plate and the walls defining the elongated holes to prevent a reaction product from reaching the glass plate. Accordingly, Imitake et al. does not teach, and even teaches against, a radiation permeable wall portion having a plurality of recesses, and thus claim 1 and the claims depending therefrom are patentable over Imitake et al.

Claim 30 similarly recites "a wall comprising a radiation permeable wall portion, the radiation permeable wall portion having a plurality of recesses originating at an internal surface of the radiation permeable wall portion, the recesses having an

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aspect ratio sized to reduce the deposition of process residues therein," as recited in the claim, and thus this claim and the claims depending therefrom are similarly patentable over Imatake et al. because Imatake et al. does not teach or suggest the radiation permeable wall portion.

Claim 18 is not anticipated by Imatake et al. because Imatake et al. does not teach "a chamber having a support, gas inlet, gas energizer, and exhaust, and a ceiling having an integral radiation permeable wall portion, the radiation permeable wall portion having a recess sized to reduce the deposition of process residues therein," as recited in the claim. Instead, as discussed above, Imatake et al. discloses a sampling window having a glass plate that is a separate piece and is mounted by a hermetic sealing O-ring on the sidewall of a chamber, as shown in Figure 4, and thus does not teach a radiation permeable portion in a ceiling, and also does not teach that the radiation permeable portion is integral, and thus forms a single unit with, the ceiling. Accordingly, claim 18 and the claims depending therefrom are not anticipated by Imatake et al.

Claim 51 similarly recites "a sidewall about the support, the sidewall having an integral radiation permeable wall portion, the radiation permeable wall portion comprising at least one recess sized to reduce the deposition of process residues therein," and thus this claim and the claims depending therefrom are not anticipated by Imatake et al. because Imatake et al. does not teach a radiation permeable portion that is integral with a sidewall.

#### Koshimizu

The Examiner rejected claims 1-5, 8-13, 18-23, 30-32, 34, 51, 55-60 and 64 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,322,590 to Koshimizu. This rejection is respectfully traversed.

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Claim 1 is not anticipated by Koshimizu because Koshimizu does not teach "a wall having a radiation permeable wall portion, the radiation permeable wall portion comprising a plurality of recesses sized to reduce the deposition of process residues therein," as recited in the claim. Instead, Koshimizu discloses that "a hollow cylinder having an observation window 504 is secured to the chamber 406 in an airtight fashion by means of an O-ring 506" (column 41, lines 5-8), as is also illustrated in Figure 26. Thus, Koshimizu discloses a single cylinder, but does not teach a radiation permeable wall portion having a plurality of recesses, as in the claim. Accordingly, claim 1 and the claims depending therefrom are not anticipated by Koshimizu et al.

Claim 30 similarly recites "a wall comprising a radiation permeable wall portion, the radiation permeable wall portion having a plurality of recesses originating at an internal surface of the radiation permeable wall portion, the recesses having an aspect ratio sized to reduce the deposition of process residues therein," and thus this claim and the claims depending therefrom are not anticipated by Koshimizu because Koshimizu does not teach a plurality of recesses.

Claim 18 is not anticipated by Koshimizu because Koshimizu does not teach "a ceiling having an integral radiation permeable wall portion, the radiation permeable wall portion having a recess sized to reduce the deposition of process residues therein," as recited in the claim. Instead, as discussed above and shown in Figure 4, Koshimizu discloses a separate cylinder secured to a sidewall by an o-ring. Thus, Koshimizu does not teach a radiation permeable wall portion that is a part of a ceiling, and also does not teach a radiation permeable wall portion that is integral with the ceiling. Accordingly, claim 18 and the claims depending therefrom are not anticipated by Koshimizu.

Claim 51 is similarly not anticipated by Koshimizu because Koshimizu does not teach "a sidewall about the support, the sidewall having an integral radiation permeable wall portion, the radiation permeable wall portion comprising at least one recess sized to reduce the deposition of process residues therein," as recited in the

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claim. Koshimizu does not teach a radiation permeable portion that is integral with a sidewall about a support. Accordingly, claim 51 and the claims depending therefrom are not anticipated by Koshimizu.

**O'Neill et al.**

The Examiner rejected claims 1, 2, 14, 18, 21, 23, 30, 31, 35, 36, 51, 52, 55, 61 and 62 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,770,097 to O'Neill et al. This rejection is respectfully traversed.

Claim 1 is not anticipated by O'Neill et al. because O'Neill et al. does not teach "a wall having a radiation permeable wall portion, the radiation permeable wall portion comprising a plurality of recesses sized to reduce the deposition of process residues therein," as recited in the claim. O'Neill et al. discloses viewing ports 58 and 60 on either side of the chamber and that are set off from the chamber, as illustrated in Figure 1, and wherein "The beam 56 is directed through the chamber 32 via viewing ports 58 and 60" (column 4, lines 64-65.) O'Neill does not disclose that the viewing ports having a plurality of recesses, and does not disclose that the viewing port has a recess sized to reduce deposition. Accordingly, claim 1 and the claims depending therefrom are not anticipated by O'Neill et al. Claim 30 similarly recites a plurality of recesses sized to reduce deposition, and thus is also not anticipated by O'Neill et al.

Claim 18 is not anticipated by O'Neill et al. because O'Neill et al. does not teach "a ceiling having an integral radiation permeable wall portion, the radiation permeable wall portion having a recess sized to reduce the deposition of process residues therein," as recited in the claim. Instead, as discussed above, O'Neill et al. discloses viewing ports set off from the chamber, but does not teach that the viewing ports are integral with a ceiling, or that they comprise a recess sized to reduce deposition. Thus, claim 18 is not anticipated by O'Neill et al. Claim 51 similarly recites a sidewall having an integral radiation permeable wall portion and recess sized to reduce deposition, and thus is also not anticipated by O'Neill et al.



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## Kondo

The Examiner rejected claims 1, 15, 51 and 63 under 35 U.S.C. 102(b) as being anticipated by JP Patent 62-042514 to Kondo. This rejection is respectfully traversed.

Claim 1 is not anticipated by Kondo because Kondo does not teach "a wall having a radiation permeable wall portion, the radiation permeable wall portion comprising a plurality of recesses sized to reduce the deposition of process residues therein," as recited in the claim. Kondo discloses "A shielding plate 15 is, for example, made of tantalum and provided with a hole 15a with a diameter of 1 mm, and a hole 15a is positioned on the focal point of a lens 12" (abstract) with the shielding plate 15 being placed in front of a view port 13, as shown in Figure 1. Thus, Kondo discloses a shielding plate with a single hole in front of a view port, but does not disclose a plurality of recesses, and does not disclose that the view port comprises recesses sized to reduce deposition. Accordingly, claim 1 and the claims depending therefrom are not anticipated by Kondo.

Claim 51 recites "a sidewall about the support, the sidewall having an integral radiation permeable wall portion, the radiation permeable portion comprising at least one recess sized to reduce the deposition of process residues therein," and thus this claim is also not anticipated by Kondo because Kondo does not teach a radiation permeable portion that is integral with a sidewall, and also does not teach a radiation permeable portion having a recess sized to reduce deposition. Accordingly, claim 51 and the claims depending therefrom are not anticipated by Kondo.

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### CONCLUSION

The above-discussed amendments are believed to place the present application in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to telephone Applicant's representative at the number listed below.

Respectfully submitted,

JANAH & ASSOCIATES, P.C.

Date: June 17, 2003

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